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Statistical Bulletin

METROPOLITAN LIFE INSURANCE COMPANY

Volume 27 OCTOBER 1946 *Number 10*

Does the Presidency Shorten Life?

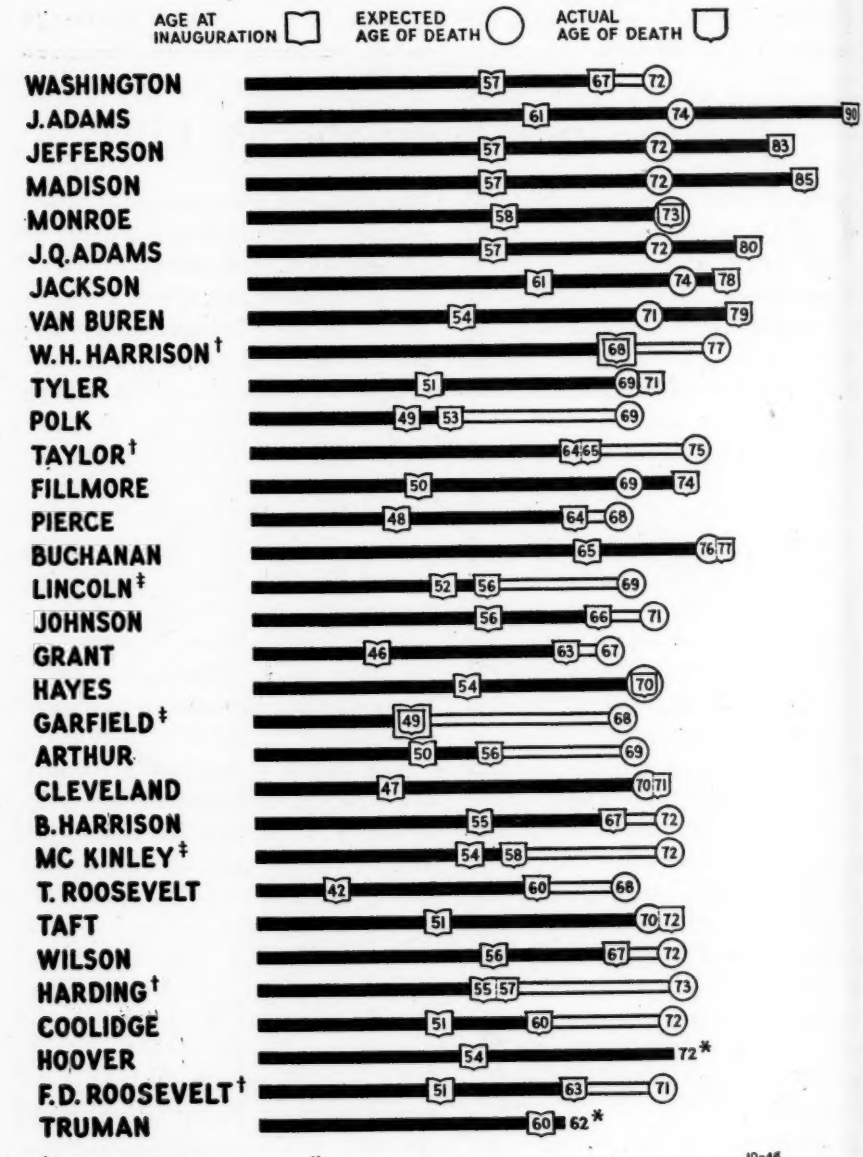
ONLY twelve of our thirty deceased Presidents outlived their expectation of life at inauguration, and the long-lived executives were concentrated, for the most part, in the earlier period of the Nation's history. Of our first ten Presidents, eight lived beyond their inauguration for more years than would have been expected on the basis of mortality conditions then prevailing; the exceptions are George Washington and William H. Harrison. On the other hand, of our Chief Executives since 1900, only William Howard Taft survived his expectation of life at inauguration. Herbert Hoover, our only living ex-President, has practically reached the mark, while the present incumbent—Harry S. Truman—has many years to go before attaining the expectation of life reckoned from his inauguration. The chart on page 2 shows, for each President, the age at inauguration, the actual age at death, and the expected age at death according to mortality conditions prevailing about the time of his inauguration.

Our Presidents are, with few exceptions, well in or past midlife by the time they enter their high office. The youngest was Theodore Roosevelt, who was only 42 years of age at inauguration. Five were between 45 and 49 years of age; eleven between 50 and 54; nine between 55 and 59; four between 60 and 64; and only two were over 65. The oldest, William Henry Harrison, died one month after taking office at age 68. Except for President Truman, none of our Chief Executives since Buchanan (inaugurated in 1857) had passed his 60th birthday before inauguration. In contrast to an average age of 58⅓ years at inauguration for those taking office before 1850, the succeeding incumbents averaged 52 years.

The physical and mental strains in rendering executive decisions in a highly industrialized nation of 140,000,000 people undoubtedly exceed the burdens that were imposed by an essentially agricultural economy of a few million persons. In order to help ascertain whether the added burdens of our later Presidents have affected their length of life, a comparison was made of their expectations at inauguration with the years of life actually lived from that date to death. This comparison excludes William Henry Harrison,

LONGEVITY OF PRESIDENTS OF THE UNITED STATES

Expected Years of Life After Inauguration Compared with the Years Actually Lived



† DIED DURING TENURE
‡ ASSASSINATED

*AGE IN OCT, 1946

10-46

Metropolitan Life Insurance Company

who served only one month, and Presidents Lincoln, Garfield, and McKinley, all of whom were assassinated. On this basis, it was found that the Presidents who took office before 1850 outlived their expectation of life at inauguration by an average of 2.9 years. On the other hand, the Presidents who served from 1850 to 1900 fell short of their expectation of life at inauguration by an average of 2.9 years. The deficiency is increased to about six years when the three Presidents who were assassinated are included in the computations for this half century. The Presidents who have held office during the present century have made an even poorer record; their length of life since inauguration has been, on an average, eight years less than their expectation of life at the time of taking office. Even if allowance is made for the exclusion of Herbert Hoover from this group, the difference is still appreciable.

It can hardly be inferred from these figures alone that the Presidency now takes years of life from its incumbents. There are other factors to be considered, such as the burdens of their public services before taking office. It is true, however, that unsuccessful candidates for the Presidency have fared much better, on the whole, with respect to longevity than have those who were elected to national leadership.

Postwar Mortality at New Low

THERE is every indication that the year 1946, despite a poor start, will establish a new low mortality record among the many millions of Metropolitan Industrial policyholders. During the past *six* months, the death rate in this insurance experience has continued at an unprecedentedly low level. When the first three months are included, the death rate for the first *nine* months of the year, 7.5 per 1,000, is identical with that recorded for the like part of last year, and slightly above the minimum established in 1942.* But when adjustment is made for changes in the age composition of the insured over the years, the mortality even for the first nine months falls below that for the comparable period of any previous year.

The postwar mortality picture is favorable also when analyzed according to age. Among white male policyholders, the death rate for the nine months January to September is lower this year than last at practically every age period. The decreases have been particularly large at the military ages—slightly more than 30 percent at 20 to 24 years, and just over 22 percent at 25 to 34. Even when compared with the banner year 1942, the mortality among white males currently is below the prior rate at every age period except 5 to 9 and 15 to 24. Among white females the death rates in 1946 are lower at every age than in the period 1942 to 1944. The same statement

*All rates quoted in this article are exclusive of deaths from enemy action.

can be made as regards the comparison with 1945, except for the age group 15 to 24 years. The particularly marked increase observed at ages 20 to 24, in the rate for 1946 over that for the preceding year, results from the rise in deaths from accidents and from diseases incidental to childbearing.

The adverse effect of the epidemic of respiratory conditions which prevailed in the early part of 1946 has worn off as the year advanced. Beginning with April, the mortality from influenza and pneumonia has been more favorable this year than last. For the first nine months the death rate from these two diseases combined is less than 4 percent above the all-time low rate established in 1945.

It now appears that the continuous decline in the mortality from tuberculosis, which has been in

DEATH RATES PER 100,000 FROM ALL CAUSES, EXCLUDING DEATHS FROM ENEMY ACTION. WHITE PERSONS BY SEX AND AGE PERIODS. FIRST NINE MONTHS OF 1942–1946. METROPOLITAN LIFE INSURANCE COMPANY, WEEKLY PREMIUM-PAYING INDUSTRIAL BUSINESS

SEX AND AGE PERIOD	DEATH RATES PER 100,000					PERCENT CHANGE 1946 SINCE	
	1946†	1945	1944	1943	1942	1945	1942
White Males							
Under 75*....	662.3	702.4	728.7	742.7	701.7	— 5.7	— 5.6
Under 5.....	372.2	412.8	469.8	493.4	418.7	— 9.8	—11.1
5–9.....	92.8	93.1	109.2	110.7	89.9	— .3	+ 3.2
10–14.....	76.8	78.4	97.8	93.6	87.6	— 2.0	—12.3
15–19.....	152.0	177.4	182.7	169.7	146.6	—14.3	+ 3.7
20–24.....	238.0	342.2	331.9	282.3	219.5	—30.5	+ 8.4
25–34.....	233.5	301.3	282.4	288.0	262.8	—22.5	—11.1
35–44.....	522.1	553.0	555.0	589.3	598.1	— 5.6	—12.7
45–54.....	1,259.4	1,247.1	1,299.3	1,349.7	1,357.4	+ 1.0	— 7.2
55–64.....	2,654.5	2,692.8	2,787.4	2,806.7	2,785.5	— 1.4	— 4.7
65–74.....	5,506.8	5,695.1	5,956.5	6,158.7	5,638.3	— 3.3	— 2.3
White Females							
Under 75*....	429.5	434.0	476.9	485.4	474.6	— 1.0	— 9.5
Under 5.....	318.5	331.7	384.1	382.1	331.4	— 4.0	— 3.9
5–9.....	62.7	65.9	71.7	69.3	63.5	— 4.9	— 1.3
10–14.....	47.5	51.1	60.8	60.4	56.5	— 7.0	—15.9
15–19.....	69.5	67.6	96.2	89.6	92.6	+ 2.8	—24.9
20–24.....	121.2	102.1	127.7	137.5	142.1	+18.7	—14.7
25–34.....	165.2	170.7	184.8	192.6	193.0	— 3.2	—14.4
35–44.....	305.5	305.2	332.5	364.1	369.1	+ .1	—17.2
45–54.....	705.7	723.9	741.7	760.5	791.5	— 2.5	—10.8
55–64.....	1,575.9	1,598.6	1,711.7	1,766.4	1,799.9	— 1.4	—12.4
65–74.....	4,104.5	4,116.9	4,582.4	4,539.9	4,234.8	— .3	— 3.1

*Standardized for age on the basis of the Standard Million Population of England and Wales, 1901.
†Provisional.

evidence for two decades, may be maintained in 1946. The excess of approximately 7 percent reported for the first quarter of the year has now been eliminated, and the death rate for the year to date, 37.9 per 100,000, is identical with the previous low recorded last year.

Three of the principal communicable diseases of childhood—scarlet fever, whooping cough, and diphtheria—record minimal rates, while measles, because of its high incidence during the spring, shows a higher death rate this year than last. For this group of diseases together, the rate for 1946 remains identical with that of the previous low.

In addition to being a "measles year," 1946 has suffered an epidemic of poliomyelitis, which has produced more cases than any outbreak since 1916. The disease has been particularly prevalent in four Midwestern States—Minnesota, Wisconsin, Illinois, and Michigan—and two Western States—Colorado and California. Fortunately, the case-fatality rate of the disease has been reduced by four fifths since 1916. In the January to September period the death rate from poliomyelitis among the Industrial policyholders was 1.1 per 100,000, or very little above the rate for last year and below the figure for 1944, the previous epidemic year.

The death rate from cerebrospinal meningitis, which rose considerably in 1943 and 1944 under the impact of war conditions, has again declined to approximately prewar levels.

For four diseases, namely, syphilis, diarrhea and enteritis, appendicitis, and diseases of the puerperal state, new low rates are recorded this year. The decline in the over-all mortality from diseases incidental to childbearing is particularly noteworthy in view of the upward trend in the birth rate. This latter, indeed, did not fail to show itself by increased mortality from puerperal conditions when the age group 20 to 24, separately, is observed.

Among the chronic diseases, the mortality from cancer and from the cardiovascular-renal group continued to increase in 1946, the rates reaching new highs. Diabetes, the death rate from which has been declining for several years, is up again, although the increase is less this year than the decline reported for 1945.

The death rate from accidents is lower in 1946 than a year ago because of the sharp drop in "other accidents," the category to which most of the accidental deaths of men in service are assigned. Occupational accidents are also somewhat lower than last year. In contrast, suicides, homicides, and fatal home and motor vehicle accidents have increased. The death rate from suicides for the first nine months of 1946 is 7.5 per 100,000—the highest since 1940. For homicides the rate is 4.0 per 100,000, the highest since 1939. Except for September, each month this year has recorded a higher rate for motor vehicle accidents than the corresponding month a year ago. As a result, the death rate for the year, to date, is almost 18 percent above the figure for the like part of last year.

Childhood Diseases Conquered

PHENOMENAL progress has been made in the control of the four communicable diseases of childhood—measles, scarlet fever, whooping cough, and diphtheria. Among Metropolitan Industrial policyholders at ages 1 to 14, the age-adjusted death rate from this group of diseases fell from 144.6 per 100,000 in 1911-1915, to one twentieth of this (7.2) in 1941-1945, a drop of 95 percent in little more than a generation. In the recent five-year period the mortality from the four diseases *together* was only one tenth that from diphtheria *alone* in the earlier years. The largest decline in death rate, 96 percent, was recorded for diphtheria and for scarlet fever; the decline for measles was 93 percent and for whooping cough 91 percent.

The control of these childhood diseases has added materially to the average length of life in the period under survey. In 1911-1912 among the insured at age 1, these four diseases were together responsible for a loss of more than 13 months in expectation of life; currently the loss from these infections at age 1 is almost negligible.

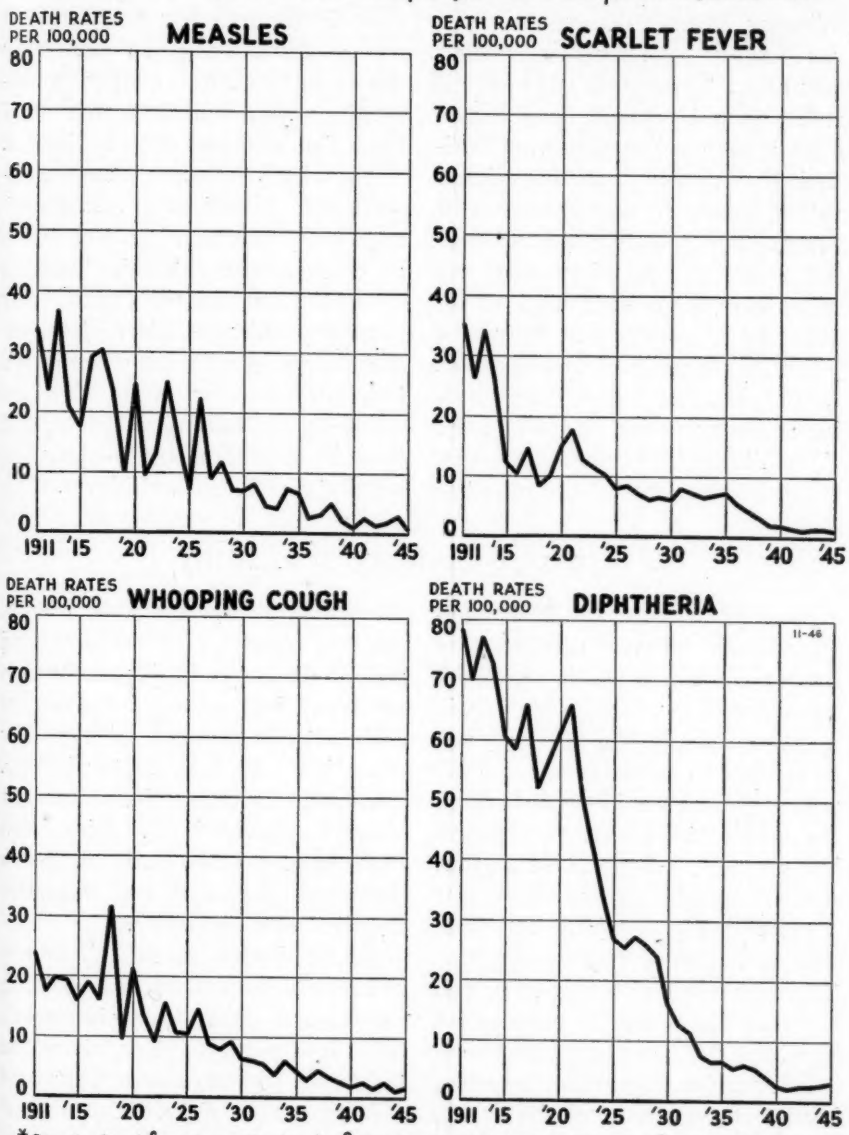
Many factors have been at work to bring about this remarkable achievement. Considerable attention has been directed toward the improvement of child health, notably by more and better medical and nursing care and nutrition. The widespread program of health education has given mothers a sound understanding of the principles of child care and has thus enabled them to rear more sturdy children. Moreover, housing conditions have improved, providing for greater sanitation, and this, in combination with the trend toward smaller families, has reduced the opportunities for transmitting communicable diseases from one member of a family to another. There is no question but that infants and children have been the chief beneficiaries of the marked rise in our standard of living.

In addition to these general developments, a number of specific factors have been operating to effect the marked reduction in the mortality from the communicable diseases of childhood illustrated graphically in the chart on page 7. For diphtheria, treatment with antitoxin came in just before the turn of the century; the Schick test for determining susceptibility to the disease was introduced in the early years of the period under survey; and procedures for active immunization of susceptible children began to be used on a nationwide scale about 1921, with eminently successful results. Before the enormous task of immunizing millions of infants and children could be accomplished, it was necessary to educate parents regarding the harmlessness and value of the procedure. In addition, the success of the campaign was made possible by the wholehearted and intelligent cooperation of the medical profession, public health workers, and school administrators.

PRINCIPAL COMMUNICABLE DISEASES OF CHILDHOOD

Annual Death Rates,* Ages 1 to 14 Years

Metropolitan Life Insurance Company, Industrial Department, 1911 to 1945



*Standardized for age on the basis of the Standard Million Population of England & Wales, 1901

For scarlet fever a major factor in the downward trend of mortality has apparently been a decreased virulence of the causative organism. Whereas several decades ago the case-fatality rate for scarlet fever was about 15 percent, at present it is less than 1 percent. In the past decade, convalescent serum and antitoxin have proved a valuable adjunct in the treatment of the disease in severe cases. Specific measures for the control of whooping cough and of measles have been used to an appreciable extent only in recent years, and hence at best can account for only a small part of the over-all improvement in the mortality from these diseases. Immune globulin, which has been introduced recently, holds promise for the further control of measles. The attack on the whole group of the communicable diseases of childhood has been aided materially in the past few years by the use of chemotherapy in combating the complications, mainly pneumonia, which constitute the chief hazard in most cases of these diseases.

The efforts to suppress these communicable infections of childhood have brought a rich harvest. Even so, these diseases still claim the lives of about 5,000 children a year in our general population. The majority of these lives can be saved through immunization for those diseases where such means are available, and by early and adequate medical and nursing care in cases of illness.

A Quarter-Century of Insulin

THIS year marks the 25th anniversary of the discovery of insulin by the late Sir Frederick Banting and Dr. Charles H. Best in Toronto, Canada. The discovery was a milestone in the history of medicine not only because it revolutionized the clinical treatment of diabetes, but also because it provided the first potent weapon against a major chronic disease of middle and later life. Insulin has greatly extended the length of life of diabetics, and has made it possible for them to live relatively healthy and active lives.

The unmistakable effectiveness of insulin in the control of diabetes is best illustrated by studies of the mortality of diabetic patients. Analysis of the mortality experience of the George F. Baker Clinic in Boston shows a reduction of more than 95 percent at ages under 40; a reduction of two thirds among middle-aged diabetics and of about half for older diabetics. A major factor in this decline in mortality has been the sharp reduction in fatalities from diabetic coma. Similarly, the death rate from infections and gangrene has decreased markedly.

In the 25 years since the discovery of insulin, the number of diabetics in our population has greatly increased. This is a natural result, since the substance and the newer treatment prolong the life of the diabetic without effecting an actual cure. There are other factors working in the same direction. One is the aging of our

population—that is, the increasing proportion of those age groups which are most subject to diabetes. Another factor, which affects the recorded prevalence, is the development of relatively inexpensive tests for the disease and the greatly increased use of these tests, partly through their more routine use in physicians' offices and hospitals, but also through the growing popularity of periodic and of industrial examinations of seemingly healthy persons. In the same way, the greatly increased number of medical examinations incidental to the rapid growth of the Life insurance business has brought to light many unsuspected cases. It is particularly noteworthy that in the quarter century under discussion Life insurance among women has increased by leaps and bounds.

The discovery of insulin itself also has led to increasing frequency of the diagnosis of the disease by arousing both physicians and the general public to an awareness of the disease. As a result of these and other factors, the number of known diabetics in this country has increased at a far more rapid rate than the total population of the country. In fact, it is estimated that the number of known diabetics has more than doubled in the last 25 years. The increase has been particularly large in middle life and old age.

In view of this great increase in the number of diabetics, it is only to be expected that the long-term trend of the death rate from diabetes in the general population would be upward, and in fact this is the case even when correction is made for the aging of the population. Thus, among policyholders of the Metropolitan Life Insurance Company, the age-corrected death rate in the five-year period 1941 to 1945 was 11 percent above the rate for the preinsulin years 1920 to 1922. So marked, however, has been the improvement in the mortality among diabetics that at all ages up to 55 the death rates have actually fallen. As the table on page 10 shows, the death rates among insured white males at ages under 35 in 1941-1945 were about two thirds less than the rates for 1920-1922, and the reduction among females at these ages was more than 50 percent. Only at ages past 55 are the rates for 1941-1945 above those for the preinsulin period.

In fact, the recent war years have seen a reversal of the long-time upward trend even at the later ages. This reflects the working of several forces. The sulfa drugs, and, more recently, penicillin, have been of special benefit to diabetics by reducing the mortality from respiratory, surgical, and other infections which are particularly hazardous to those suffering from diabetes. Not only have major amputations for gangrene been rendered safer through chemotherapy, but there are indications that the sulfa drugs and penicillin have reduced the number of cases requiring such drastic surgery. During the war period food restrictions probably have had a twofold effect: first, to prevent or postpone the onset of the disease in susceptible individuals; second, to enforce closer

adherence to prescribed diets of those already diabetic. Another possible wartime factor favoring the reduction in diabetes mortality was the increased wartime employment of diabetics. In addition, recent years have witnessed increasingly better medical management of patients, in part through the introduction of slower-acting insulins, which have provided better and more accurate control of the disease.

Thanks to insulin, to the increasingly better understanding of diabetes, and to advances in medicine generally, the outlook for the diabetic patient now is better than ever before. A further improvement can be forecast with confidence. This progress will be accelerated by the earlier discovery of cases and by thorough instruction of diabetics in the essentials of their disease, so that they may benefit most from modern treatment. Public health programs which are only now beginning to be applied in diabetes can be extremely effective in achieving these ends. The program for the control of diabetes is at present in much the same condition as that against tuberculosis was about three decades ago. A concerted effort by official and voluntary agencies to educate the people should help bring the disease under much better control. These agencies can serve to awaken the public to the need for sufficient facilities to care for our growing population of diabetics.

DEATH RATES PER 100,000 FROM DIABETES MELLITUS. WHITE PERSONS BY SEX AND AGE. METROPOLITAN LIFE INSURANCE COMPANY, INDUSTRIAL DEPARTMENT, 1941–1945 AND 1920–1922

AGE (Years)	DEATH RATES PER 100,000				PERCENT CHANGE 1941–1945 SINCE 1920–1922	
	White Males		White Females			
	1941–1945	1920–1922	1941–1945	1920–1922	White Males	White Females
1–74*.....	12.2	13.6	24.8	20.8	—10	+19
1–24*.....	1.3	3.9	1.5	3.5	—67	—57
25–34.....	2.3	7.1	2.5	5.8	—68	—57
35–44.....	5.9	9.1	6.2	9.5	—35	—35
45–54.....	21.6	23.0	35.8	38.0	— 6	— 6
55–64.....	60.8	58.1	139.4	116.6	+ 5	+20
65–74.....	134.7	100.7	314.6	173.7	+34	+81

*Death rates standardized for age on basis of Standard Million Population of England and Wales, 1901.

Comparative Data on the Causes of Death Among Industrial Policyholders

The following table shows the mortality among Industrial policyholders for September 1946 and September 1945, together with the death rates for the first nine months of 1946, 1945, and 1944.

DEATH RATES* PER 100,000 POLICYHOLDERS FROM SELECTED CAUSES
WEEKLY PREMIUM-PAYING INDUSTRIAL BUSINESS
METROPOLITAN LIFE INSURANCE COMPANY

CAUSE OF DEATH	ANNUAL RATE PER 100,000 POLICYHOLDERS*				
	September 1946	September 1945	Year to Date: End of September		
			1946	1945	1944
ALL CAUSES—TOTAL	649.9	730.4	765.7	853.1	826.1
—Excluding war deaths	*646.8*	*691.3*	*749.7*	*745.8*	*777.8*
Typhoid fever	0.2	0.4	0.2	0.3	0.2
Measles	.1	.1	.8	.2	.9
Scarlet fever	.1	.1	.1	.3	.5
Whooping cough	.7	1.0	.6	.8	.6
Diphtheria	.8	.6	.6	.8	.6
Influenza	.5	1.2	5.2	3.3	10.3
Pneumonia (all forms)	15.7	17.1	27.2	27.9	35.9
Tuberculosis (all forms)	30.0	37.6	37.9	37.9	41.2
Tuberculosis of respiratory system	27.2	34.3	34.3	34.3	37.4
Syphilis	6.3	8.1	8.2	8.6	9.6
Cancer (all forms)	110.3	108.3	115.2	112.3	108.9
Diabetes mellitus	21.2	20.3	27.0	25.3	28.8
Cerebral hemorrhage	54.6	61.7	67.9	67.1	66.7
Diseases of the coronary arteries and angina pectoris	62.1	59.5	71.5	67.0	63.0
Other chronic heart diseases†	133.6	137.1	165.1	159.1	169.0
Diarrhea and enteritis	2.0	6.0	2.6	3.5	4.6
Appendicitis	3.1	5.4	3.6	5.1	5.7
Chronic nephritis	33.5	36.2	43.1	44.7	47.3
Puerperal state—total	4.1	3.0	3.2	3.5	4.2
Suicides	7.4	6.0	7.5	6.3	6.1
Homicides	3.9	3.4	4.0	3.1	3.0
Accidents—total	45.8	57.4	49.5	55.8	54.2
Home accidents	7.6	6.3	10.8	10.1	10.7
Occupational accidents	3.9	4.1	4.8	5.2	5.9
Motor vehicle accidents	14.5	18.0	15.9	13.5	13.6
War deaths (enemy action)	3.1	39.1	16.0	107.3	48.3
All other causes of death	110.7	121.0	108.7	113.0	116.4

*The rates for 1946 are subject to slight correction, since they are based on provisional estimates of lives exposed to risk.

†International List (1940) titles 92, 93 (c), (d), (e), and 95.

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STATISTICAL BULLETIN
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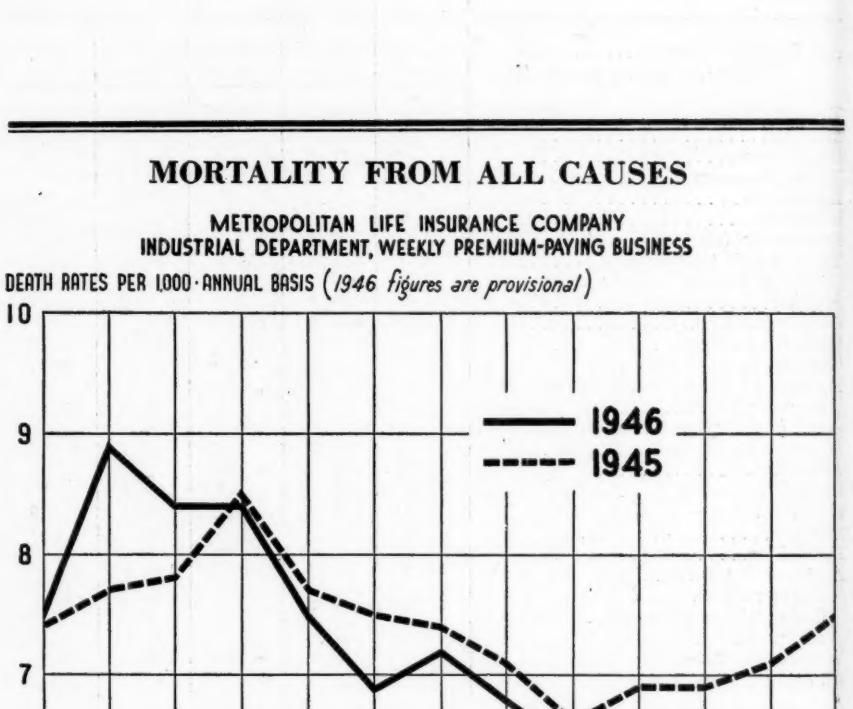
MORTALITY FROM ALL CAUSES

METROPOLITAN LIFE INSURANCE COMPANY
INDUSTRIAL DEPARTMENT, WEEKLY PREMIUM-PAYING BUSINESS

DEATH RATES PER 1,000 · ANNUAL BASIS (*1946 figures are provisional*)



	[DEC]	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1945		7.7	7.8	8.5	7.7	7.5	7.4	7.1	6.6	6.9	6.9	7.1	7.5
1946		8.9	8.4	8.4	7.5	6.9	7.2	6.8	6.4	6.5			

* *Does not include war deaths*

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